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Higher Order Fluid Moments for the Gyrokinetic MHD Equations including the Finite-Larmor-Radius Effects[1] W. W. LEE, Princeton Plasma Physics Laboratory — W. W. Lee, Princeton Plasma Physics Laboratory, Princeton, NJ 08540 As shown earlier, gyrokinetic MHD equations including the Finite-Larmor-Radius effects [1] can produce some interesting physics in the steady state of the tokamak/stellarator experimrnts such as island formations [2] and force-free configurations [3]. Here, we will present the extension of these equations by including all the relevant fluid quantities such as vorticity, parallel current, pressure and heat flux. The numerical as well as the conservation properties of these equation will also be discussed. *This work is partially supported by DoE grant to PPPL and partially supported by Social Security and TIAA funds. [1] W. W. Lee, Phys. Plasmas **23**, 070705 (2016); [2] W. W. Lee, S. R. Hudson and C. H. Ma, Phys. Plasmas **24**, 124508 (2017); [3] W. W. Lee and R. B. White, Phys. Plasmas **24**, 081204 (2017); Phys. Plasmas **25**, 054702 (2018); [4] W. W. Lee and R. B. White, Phys. Plasmas **26**, 040701 (2019)

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